

REMARKS

Claims 1-83 are currently pending in this application. Claims 12-16, 18-21, 24-27, 29-32, 35-50, 54-58, 60-63, 66-69, 71-74 and 77-80 were withdrawn due to a previous restriction requirement. Claims 1, 51, 81, and 82 are currently amended. Claims 2, 3, 10, 11, 17, 22-23, 28, 33-34, 52-53, 59, 64-65, 70, 75-76 are original. Claims 5-9 are previously presented. Claim 4 was canceled. Claim 83 is new. No new matter is added. Support for claim 83 may be found in, for example, paragraphs [0034] and [0041] of the instant application. Claims 1-3, 5-11, 17, 22-23, 28, 33-34, 51-53, 59, 64-65, 70, 75-76, and 81-82 stand rejected under U.S.C. §102(b) as being anticipated by U.S. Pat. No. 5,865,051 to Otzen et al. (hereinafter "Otzen"). Applicants hereby traverse the rejection and respectfully request reconsideration in view of the remarks set forth below.

I. Applicants' claims patentably distinguish over Otzen because Otzen does not disclose a coupling that allows the wire holder to rotate freely.

Independent claims 1, 51, and 81-82 are directed toward an apparatus for manufacturing a coil spring from a wire, comprising a wire holder that is freely rotating. Otzen does not describe the subject matter of these independent claims.

First, Applicants remind the Examiner that Otzen does not contemplate particular issues with uncoiling twisted multi-stranded wire having a knurled exterior surface that the Applicants have identified and overcome with the claimed invention. In particular, the coupling in the claimed apparatus allows the wire holder to rotate freely about the holding axis in response to the high amounts of torque acting across the cross section of the wire, thereby preventing the multi-stranded wire from fraying or fracturing. Otzen fails to reduce this torque because Otzen's system does not include a coupling that allows the wire holder to rotate freely.

Instead, Otzen discloses a system in which "[t]he degree of . . . [wire] deflection [due to torsion stress] is determined by the recognition unit **E1** and leads over a separate control unit to a turn of the uncoiling device **A** in bearing **L3** so that the torsion stress is eliminated" (Otzen, col. 4 lines 24-27). This coupling **L3**, which the Office Action refers to (Action, p. 3), does not allow Otzen's wire holder to rotate freely in response to the force of a torque acting on the wire holder; rather, the movement of the uncoiling device **A** facilitated by bearing **L3** is caused by a "separate control unit" which acts in response to the recognition unit **E1** detecting a wire deflection due to torsion stress. Similarly, the other bearings disclosed in Otzen as part of uncoiling device **A**, **L1** and **L2**, also do not allow the wire holder to rotate freely; instead, "[a] second recognition unit **E2** is provided . . . and controls the drives of guide rollers **R** and bearings **L1**, **L2**" (Otzen, col. 4 lines 28-32). Hence, Otzen does not disclose "[a] wire holder supported by a coupling that allows the wire holder to rotate freely about a holding axis," as recited in independent claim 1.

Second, Applicants submit that if, *arguendo*, the coupling **L3** in Otzen allowed the wire holder to rotate freely, then Otzen's deflection detection system would be both useless and inoperable. In Otzen's apparatus, "[w]hen the wire has torsion stress, the wire loop **S** leaves its vertical position . . . [and the] degree of this deflection is determined by the recognition unit **E1** and leads over a separate control unit to a turn of the uncoiling device **A** in bearing **L3** so that the torsion stress is eliminated" (Otzen, lines 23-27). Thus, Otzen's apparatus transforms the torsion stress of the wire into a physical displacement of the wire loop **S**. This physical displacement is sensed by the recognition unit **E1**, which then causes the control unit to turn the uncoiling device **A** to eliminate the physical displacement and the sensed torsion stress. If **L3** allowed the wire holder to rotate freely, then any wire torsion stress would cause the wire holder to rotate independent of the recognition or control units in order to relieve the torsion stress in the wire. As a result, there would be no torsion stress left to cause a deflection in wire loop **S**. Consequently, Otzen's wire loop deflection detection and adjustment system would be rendered useless, because the torsion stress is relieved without the use of the recognition or control units.

Moreover, if Otzen's system contained a freely rotating wire-holder, then the "separate control unit" would not only be useless, but also be inoperable. Otzen teaches that this "separate control unit" controls the uncoiling device A and causes it to rotate about the bearings. If the uncoiling device A was capable of free rotation, then it could rotate independent of the "separate control unit." Any attempt by the control unit to rotate the uncoiling device could not be transmitted through the freely-rotating joint to the uncoiling device. Hence, the "separate control unit" would have no control over the uncoiling device A and would be rendered inoperable.

For at least the above reasons, Applicants request reconsideration and withdrawal of the rejection of independent claim 1. Claims 2-11, 17, 22-23, 28 and 33-34 depend from claim 1 and add further limitations thereto. Thus, Applicants request reconsideration and withdrawal of the rejections of these claims as well. Amended independent claims 51, 81 and 82 include similar subject matter. Claims 52-53, 59, 64-65, 70 and 75-76 depend from independent claim 51. Applicants respectfully request reconsideration and withdrawal of the §102 rejections of these claims, as well.

New claim 83 is directed toward an apparatus for manufacturing a coil spring from a wire. This apparatus comprises a wire holder assembly containing a low-friction coupling with a first axis rotationally coupled to a wire holder. A torque acting across a cross section of a wire in the wire holder assembly is mechanically converted into a rotation of the wire holder about the first axis in order to reduce the torque. Support for this claim may be found in Applicants' disclosure at, for example, paragraphs [0034] and [0041]. Claim 83 is allowable over Otzen because Otzen fails to describe either a low-friction coupling or a situation where a torque is mechanically converted into a rotation of the wire holder. Applicants remind the Examiner that the wire holder rotation in Otzen is caused by a wire loop adjustment system that detects a wire loop displacement and actuates the rotation. Furthermore, there is no mention of low-friction couplings in Otzen. The remarks provided above regarding claim 1 also apply to claim 83, i.e. Otzen's system modified with a low-friction coupling to mechanically convert a torque into a rotation of the wire holder would render

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Otzen's system useless and inoperable. For at least the above reasons, Claim 83 is allowable over Otzen.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

We believe we have appropriately provided for fees due. However, if there are any other fees due in connection with the filing of this submission, please charge the fees to our Deposit Account No. 18-1945, under Order No. SMCY-P01-101 from which the undersigned is authorized to draw.

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Respectfully submitted,

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